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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,336	10/31/2003	Douglas J. Mooney	112-0128US	9686

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WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI,
P.C.
20333 SH 249
SUITE 600
HOUSTON, TX 77070

EXAMINER

REHM, ADAM C

ART UNIT PAPER NUMBER

2875

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/698,336	MOONEY, DOUGLAS J.	
	Examiner	Art Unit	
	Adam C. Rehm	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities: Claim 15, the word "suh" appears to be incorrect with the intended word being "so." Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5-9, 16, 17 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by LEE (US 5,790,041).
4. In regards to Claims 1, 2 and 5-9, LEE provides: a segmented top (234, 304 in Fig. 3A) wherein each segment (234, 304) is generally planar and connected to the adjacent segment (Fig. 3A); a back wall (396, Fig. 4A) having a top portion (300) connected to the segmented top (234, 304), a generally planar bottom portion (305) and opposing side portions (left and right side walls in Fig. 3B); a pair of opposing side walls (left and right side walls in Fig. 3B) connecting the segmented top to the back wall; a plurality of interior walls (Figs. 3A and 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion (300) to the segmented top (234, 304) and connected on

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their rear portion (300) to the back wall (396) and having their bottom portions (305) generally coplanar with the bottom of the back wall (396, Fig. 4A); wherein the interior walls (Figs. 3A and 3B) are opaque (Column 2, Lines 5-8); at least one segment (234, 304 in Fig. 3A) of the segmented top (234, 304) is in a plane which is substantially parallel to the plane defined by the bottom portions (305) of the interior walls (Figs. 3A and 3B); wherein at least one segment (bending portion of 300 in Fig. 3A) of the segmented top (304) is in a plane, which is at an acute angle to the plane defined by the bottom portions (305) of the interior walls (Figs. 3A and 3B); wherein the segmented top, back wall, opposing side walls and interior walls are formed of thermoplastic resin (Col. 4, Lines 5-9); wherein the thermoplastic resin is a polycarbonate resin (Col. 4, Lines 5-9); fabricated by the injection molding of a thermoplastic resin (Col. 4, Lines 5-9).

5. In regards to Claims 16, 17 and 21, LEE discloses: a top (300), the cross section of which generally corresponds to a segment of a parabola (Fig. 4A); a back wall (396) having an upper edge connected to the top (Fig. 4A), a generally planar bottom edge and opposing side edges (Fig. 4A); a pair of opposing side walls (left and right side walls in Fig. 3B) connecting the top (300) to the back wall (396, Fig. 4A), a plurality of interior walls (left and right side walls in Fig. 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion to the top and connected on their rear portion to the back wall (300 in Fig. 4A or Fig. 5) and having their bottom portions generally coplanar

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with the bottom edge of the back wall (Fig. 4A); wherein the interior walls are opaque (Column 2, Lines 5-8); fabricated from a black, thermoplastic resin (Col. 4, Lines 5-9).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 4, 10-13, 14, 15, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE (US 5,790,041) in view of RUSSAY ET AL. (US 5,008,658).

10. Regarding Claims 3 and 4, LEE substantially discloses the claimed invention including a light reflector (234) for PCB-mounted lights (342) comprising: a segmented top (234, 304 in Fig. 3A) wherein each segment (234, 304) is generally planar and connected to the adjacent segment (Fig. 3A); a back wall (396, Fig. 4A) having a top portion (300) connected to the segmented top (234, 304), a generally planar bottom portion (305) and opposing side portions (left and right side walls in Fig. 3B); a pair of opposing side walls (left and right side walls in Fig. 3B) connecting the segmented top to the back wall; a plurality of interior walls (Figs. 3A and 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion (300) to the segmented top (234, 304) and connected on their rear portion (300) to the back wall (396) and having their bottom portions (305) generally coplanar with the bottom of the back wall (396, Fig. 4A).

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11. LEE does not disclose: a segmented top, back wall and interior walls that are reflective to visible light (Claim 3) or diffusely reflective to visible light (Claim 4).

12. However, RUSSAY teaches a segmented top, back wall and interior walls (46, Fig. 3), which are reflective to visible light or diffusely reflective to visible light (Column 4, Lines 67 and 68, Column 5, Lines 1-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LEE device to include the type of reflective or diffusely reflective surface as taught by RUSSAY, which would provide a device that efficiently directs light in a desired direction (Column 5, Lines 6-11).

13. Regarding Claims 10-13, LEE substantially discloses the claimed invention including: a segmented top (234, 304 in Fig. 3A) wherein each segment (234, 304) is generally planar and connected to the adjacent segment (Fig. 3A); a back wall (396, Fig. 4A) having a top portion (300) connected to the segmented top (234, 304), a generally planar bottom portion (305) and opposing side portions (left and right side walls in Fig. 3B); a pair of opposing side walls (left and right side walls in Fig. 3B) connecting the segmented top to the back wall; a plurality of interior walls (Figs. 3A and 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion (300) to the segmented top (234, 304) and connected on their rear portion (300) to the back wall (396) and having their bottom portions (305) generally coplanar with the bottom of the back wall (396, Fig. 4A); a generally planar support surface (226) connected to and extending between a pair of adjacent interior walls (300, Fig. 4A) in a plane generally

parallel to the plane defined by the bottom portions (305) of the interior walls (Fig. 4A); a front wall (304) connected to and extending between the support surface (226) and the segmented top (234, 304); a mounting stud (311, Fig 3A) on the support surface for attaching the *housing* (300) to a printed circuit board (210).

14. LEE does not disclose: a mounting stud on the support surface for attaching a light reflector to a printed circuit board (Claim 10); or a mounting stud having barbs for engaging a receiving hole in a printed circuit board (Claim 11); or a mounting stud that is threaded for receiving a nut (Claim 12) or a mounting stud that is generally cylindrical and comprised of a material which may be deformed at its distal end to provide a region of increased diameter (Claim 13).

15. However, RUSSAY teaches a mounting stud (38) on a support surface (66) for attaching the light reflector (46, Fig. 3) to a printed circuit board (30); wherein the mounting stud (38) comprises barbs (Fig. 1) for engaging a receiving hole (36) in a printed circuit board (30); wherein the mounting stud (38) is threaded for receiving a similarly threaded nut (Fig. 1); wherein the mounting stud is generally cylindrical and comprised of a material which may be deformed at its distal end to provide a region of increased diameter (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LEE device to include the type of releasable attachment means as taught by RUSSAY, which would provide means to attach various objects to a printed circuit board (Col. 3, Lines 14-17).

16. Regarding Claim 14, LEE substantially discloses the claimed invention including: a chassis (225, Fig. 4A) having an interior space (301) and a front surface (304) for user

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interface; an indicator panel (220, Fig. 2, Column 1, Lines 16-20) having a front face (226, Fig. 2) and a back face (other side of 226, Fig. 4A) and mounted in the front surface (226) of the chassis (225); a plurality of windows (224) in the indicator panel (234) for transmitting light (490) from the back face (Fig. 4A) to the front face (226) of the indicator panel (220, Fig. 2, Column 1, Lines 16-20); a printed circuit board (210) mounted in the interior space of the chassis (225) such that one edge of the printed circuit board (210) is proximate the indicator panel (220, Fig. 2, Column 1, Lines 16-20) in the front surface of the chassis (Fig. 4A); a plurality of light emitting diodes (511-513, Fig. 5) mounted on the printed circuit board (210) in a generally linear array parallel to and proximate the edge of the printed circuit board (210) which is proximate the indicator panel (Fig. 5); a *housing* (300) mounted on the printed circuit board (210) comprising: a segmented top (234, 304 in Fig. 3A) wherein each segment is generally planar and connected to the adjacent segment (Fig. 5); a back wall (396, Fig. 4A) having a top portion (300) connected to the segmented top (234, 304), a generally planar bottom portion (305) and opposing side portions (left and right side walls in Fig. 3B); a pair of opposing side walls (left and right side walls in Fig. 3B) connecting the segmented top (234, 304) to the back wall (396); a plurality of interior walls (Figs. 3A and 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion (300) to the segmented top (234, 304) and connected on their rear portion to the back wall (396) and having their bottom portions generally coplanar with the bottom of the back wall (Fig. 4A); the *housing* (300) being mounted on the printed circuit board (210) over

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the plurality of light emitting diodes (511-513) in the linear array such that each light emitting diode in the array is separated from an adjacent light emitting diode in the array by at least one interior wall (Figs. 3A and 3B) of the *housing (300)* and light (495) emitted by each light emitting diode is transmitted to a corresponding window (224) in the indicator panel (Fig. 4A).

17. With respect to Claims 14, LEE does not disclose: the use of a housing (300) that is a light reflector.

18. However, RUSSAY teaches interior walls (46, Fig. 3), which are reflective to visible light or diffusely reflective to visible light (Column 4, Lines 67 and 68, Column 5, Lines 1-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LEE device to include the type of reflective or diffusely reflective surface as taught by RUSSAY, which would provide a device that efficiently directs light in a desired direction (Column 5, Lines 6-11).

19. Regarding Claim 15, LEE substantially discloses the claimed invention including: a printed circuit board (210) comprising: a plurality of light emitting diodes (511-513) mounted on the printed circuit board in a generally linear array parallel to and proximate at least one edge of the printed circuit board (Figs. 4A and 5); a *housing (300)* mounted on the printed circuit board (210) and comprising a segmented top (234, 304 in Fig. 3A) wherein each segment is generally planar and connected to the adjacent segment (Fig. 3A); a back wall (396, Fig. 4A) having a top portion (300) connected to the segmented top (Fig. 4A), a generally planar bottom portion (305) and opposing side portions (left and right side walls in Fig. 3B); a pair of opposing side walls (left and right side walls in

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Fig. 3B) connecting the segmented top to the back wall (396, Fig. 4A); a plurality of interior walls (Figs. 3A and 3B) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls connected on their top portion to the segmented top (Fig. 4A) and connected on their rear portion to the back wall (Fig. 4A) and having their bottom portions generally coplanar with the bottom of the back wall (Fig. 4A); the *housing* (300) being mounted on the printed circuit board over the plurality of light emitting diodes in the linear array [so] that each light emitting diode in the array is separated from an adjacent light emitting diode in the array by at least one interior wall of the *housing* (300) and light (490) emitted by each light emitting diode is reflected by the light reflector in a direction which is substantially parallel to the surface of the printed circuit board (Fig. 4A).

20. With respect to Claims 15, LEE does not disclose: the use of a housing (300) that is a light reflector and that reflects light in a direction that is substantially parallel to the surface of the printed circuit board.

21. However, RUSSAY teaches interior walls (46, Fig. 3), which are reflective to visible light or diffusely reflective to visible light (Column 5, Lines 3-6) and that reflects light in a direction that is substantially parallel to the surface of the printed circuit board (Fig. 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LEE device to include the type of reflective or diffusely reflective surface as taught by RUSSAY, which would provide a device that efficiently directs light in a desired direction (Column 5, Lines 6-11).

22. With respect to Claims 18-20, LEE discloses: a light reflector (234) for PCB-mounted lights (511-513) comprising: a top (300), the cross section of which generally corresponds to a segment of a parabola (Fig. 4A); a back wall (396) having an upper edge connected to the top (Fig. 4A), a generally planar bottom edge and opposing side edges (Fig. 4A); a pair of opposing side walls connecting the top to the back wall, a plurality of interior walls (300, Fig. 4A) defining chambers (301 or Fig. 5) open on their bottom surface (341) and front surface (224) said interior walls (Figs. 3A and 3B) connected on their top portion to the top and connected on their rear portion to the back wall (Fig. 4A) and having their bottom portions generally coplanar with the bottom edge of the back wall (Fig. 4A).

23. With respect to Claims 18, 19 and 20, LEE does not disclose: the use of a top that is reflective to light (Claim 18) or diffusely reflective to light (Claim 19) or an interior walls and undersurface of the top that are reflective to light (Claim 20).

24. However, RUSSAY teaches a top with an undersurface having interior walls (46, Fig. 3), which are reflective to visible light or diffusely reflective to visible light (Column 4, Lines 67 and 68, Column 5, Lines 1-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LEE device to include the type of reflective or diffusely reflective surface as taught by RUSSAY, which would provide a device that efficiently directs light in a desired direction (Column 5, Lines 6-11).

Conclusion

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25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

26. SCHMITT ET AL. (US 6,229,713) teaches a device that includes multiple light channels for separating light from adjacent indicating lights, thus preventing bleed-over, which can be constructed from various foams, plastics, metals, composites, fabrics and rubber.

27. CHEN (6,685,351) teaches an indicator light device on a computer front panel.

28. SUCKOW ET AL. (US 6,183,100) teaches a light emitting diode-warning lamp having reflectors that may be fastened to a printed circuit board via deformable mounting or snap-fit features.

29. HARDT (US 5,387,901) teaches an LED indicator light assembly mounted onto an interior side of a computer-housing wall having a reflector apparatus to manipulate the emitted light.

30. YAMAMOTO (US 3,966,303) teaches an apparatus with reflecting surfaces for reflecting light throughout an inner cavity in order to emit the light in a desired direction.

31. POSEY ET AL. (US 6,457,992) teaches a visual feedback for electronic device and provides that light pipes are often constructed from a plastic, generally translucent material.

32. HESS ET AL. (US 6,368,159) teaches the use of polycarbonate in the construction of a light pipe due to its high light transmission capability.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACR - April 28, 2005



ALAN CARIASO
PRIMARY EXAMINER